

**Puerto Rico**  
**Area Designations for the**  
**2012 Primary Annual PM<sub>2.5</sub> National Ambient Air Quality Standard**  
**Technical Support Document**

**1.0 Summary**

In accordance with Section 107(d) of the Clean Air Act (CAA), the EPA must promulgate designations for all areas of the country. In particular, EPA must identify those areas that are violating a National Ambient Air Quality Standard (NAAQS) or contributing to a violation of the NAAQS in a nearby area. EPA must complete this process within 2 years of promulgating a new or revised NAAQS, or may do so within 3 years under circumstances not relevant to these designations.<sup>1</sup> This technical support document (TSD) describes the EPA's intent to designate all areas in the Commonwealth of Puerto Rico as unclassifiable for the 2012 primary annual fine particle NAAQS (2012 annual fine particle (PM<sub>2.5</sub>) NAAQS).<sup>2</sup>

Under section 107(d), states are required to submit area designation recommendations to the EPA for the 2012 annual PM<sub>2.5</sub> NAAQS no later than 1 year following promulgation of the standard, or by December 13, 2013. In December 2013, Puerto Rico recommended that all areas in the commonwealth identified in Table 1 be designated as "unclassifiable," for the 2012 annual PM<sub>2.5</sub> NAAQS based on air quality data from 2010-2012.

After considering these recommendations and based on EPA's technical analysis as described in this TSD, the EPA intends to designate the areas listed in Table 1 as unclassifiable for the 2012 annual PM<sub>2.5</sub> standard.

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<sup>1</sup> Section 107(d) of the CAA requires the EPA to complete the initial designation process within 2 years of promulgation of a new or revised NAAQS, unless the Administrator has insufficient information to make initial designation decisions in the 2-year time frame. In such circumstances, the EPA may take up to 1 additional year to make initial area designation decisions (i.e., no later than 3 years after promulgation of the standard).

<sup>2</sup> On December 14, 2012, the EPA promulgated a revised primary annual PM<sub>2.5</sub> NAAQS (78 FR 3086, January 15, 2013). In that action, the EPA revised the primary annual PM<sub>2.5</sub> standard, strengthening it from 15.0 micrograms per cubic meter (µg/m<sup>3</sup>) to 12.0 µg/m<sup>3</sup>.

**Table 1. Puerto Rico's Recommended Areas and EPA's Intended Designated Areas for the 2012 annual PM<sub>2.5</sub> NAAQS**

Area	Puerto Rico's Recommended Unclassifiable Counties	EPA's Intended Unclassifiable Counties
Puerto Rico	Entire Commonwealth	Entire Commonwealth

EPA intends to designate the Commonwealth of Puerto Rico "unclassifiable" because current data (i.e., 2011-2013) from monitoring sites are incomplete even though prior years have indicated minimal potential for violation. For this reason, EPA cannot determine based on available information whether the area is meeting or not meeting the NAAQS.

## 2.0 Technical Analysis

In this technical analysis, EPA used the latest data and information available to EPA (and to the states and tribes through the PM<sub>2.5</sub> Designations Mapping Tool<sup>3</sup> and the EPA PM Designations Guidance and Data web page<sup>4</sup>) and/or data provided to EPA by states or tribes. This technical analysis is limited to an air quality data analysis, which involves examining available ambient PM<sub>2.5</sub> air quality monitoring data. Because EPA determined that the air quality data for this area was not complete and thus could not determine whether the area was attaining or not attaining the standard, and due to the isolated location of the Puerto Rico, EPA did not in this case go on to analyze any of the other four designation factors to determine whether any nearby areas were contributing to any potential violations. This air quality analysis includes reviewing the design values (DV) calculated for each monitoring location in the area based on air quality data for the most recent complete 3 consecutive calendar years of quality-assured, certified air quality data in the EPA's Air Quality System (AQS). In general, EPA identifies violations using data from suitable Federal Reference Method (FRM), Federal Equivalent Method (FEM), and/or Approved Regional Method (ARM) monitors sited and operated in accordance with 40 CFR Part 58.<sup>5</sup> Procedures for using the air quality data to determine whether a violation has occurred are given in 40 CFR part 50 Appendix N, as revised by a final action published in the Federal Register on January 15, 2013 (78 FR 3086).<sup>6</sup>

<sup>3</sup> EPA's PM<sub>2.5</sub> Designations Mapping Tool can be found at [http://geoplatform2.epa.gov/PM\\_MAP/index.html](http://geoplatform2.epa.gov/PM_MAP/index.html).

<sup>4</sup> EPA's PM Designations Guidance and Data web page can be found at <http://www.epa.gov/pmdesignations/2012standards/techinfo.htm>.

<sup>5</sup> Suitable monitors include all FEM and/or ARMs except those specific continuous FEMs/ARMs used in the monitoring agency's network where the data are not of sufficient quality such that data are not to be compared to the NAAQS in accordance with 40 CFR part 58.10(b)(13) and approved by the EPA Regional Administrator per 40 CFR part 58.11(e).

<sup>6</sup> As indicated in Appendix N to 40 CFR part 50, Interpretation of the National Ambient Air Quality Standards for PM<sub>2.5</sub>, section 3(a) indicates "Except as otherwise provided in this appendix, all valid FRM/FEM/ARM PM<sub>2.5</sub> mass concentration data produced by suitable monitors that are required to be submitted to AQS, or otherwise available to EPA, meeting the requirements of part 58 of this chapter including appendices A, C, and E shall be used in the DV (design value)

Figure 1 is a map of EPA's intended unclassifiable boundary for Puerto Rico.



## Air Quality Data

All data collected during the year are important when determining contributions to an annual standard such as the 2012 annual  $PM_{2.5}$  NAAQS. Compliance with an annual NAAQS is dependent upon monitor readings throughout the year, including days with monitored ambient concentrations below the level of the NAAQS. For the 2012 annual  $PM_{2.5}$  NAAQS, the annual mean is calculated as the mean of quarterly means. A high quarter can drive the mean for an entire year, which, in turn, can drive an elevated 3-year DV.

**$PM_{2.5}$  Design Values and Total Mass Measurements** - EPA calculated DVs based on air quality data for the most recent 3 consecutive calendar years of quality-assured, certified air quality data from suitable FEM/FRM/ARM monitoring sites in the EPA's Air Quality System (AQS). For this designations analysis, EPA used data for the 2011-2013 period (i.e., the 2013 DV), which are the most recent years with fully-certified air quality data. A monitor's DV is the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2012 annual  $PM_{2.5}$  NAAQS is met at a monitoring site when the 3-year average annual mean concentration is 12.0 micrograms per cubic meter ( $\mu g/m^3$ ) or less (e.g., 12.1  $\mu g/m^3$  or greater is a

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calculations. Generally, EPA will only use such data if they have been certified by the reporting organization (as prescribed by § 58.15 of this chapter); however, data not certified by the reporting organization can nevertheless be used, if the deadline for certification has passed and EPA judges the data to be complete and accurate.”

violation). A DV is only valid if minimum data completeness criteria are met or when other regulatory data processing provisions are satisfied (See 40 CFR part 50 Appendix N). Table 2 identifies the current design value(s) (i.e., the 2013 DV) and the most recent DVs based on all monitoring sites in the area of analysis.<sup>7</sup> In fact, the EPA concluded that there were no available design values for any of the Puerto Rico monitors, due to incomplete data. There were no additional FEM/FRM/ARM monitoring sites in Puerto Rico.

**Table 2. Air Quality Data collected at Regulatory Monitors (all DV levels in  $\mu\text{g}/\text{m}^3$ )**

County, State	Monitor Site ID	State Rec NA	2009-2011 Design Value	2010-2012 Design Value	2011-2013 Design Value	2011 Complete Quarters	2012 Complete Quarters	2013 Complete Quarters
Adjuntas Municipio, PR	720010002	No	Not Valid	Not Valid	Not Valid	0	2	2
Bayamon, PR	720210009	No	Not Valid	Not Valid	Not Valid	0	4	2
Fajardo, PR	720530003	No	Not Valid	Not Valid	Not Valid	3	1	0
Guayama Municipio, PR	720570008	No	Not Valid	Not Valid	Not Valid	3	4	2
Guaynabo, PR	720610005	No	Not Valid	Not Valid	Not Valid	3	4	4
Ponce Municipio, PR	721130004	No	Not Valid	Not Valid	Not Valid	0	3	4
Guayanilla Municipio, PR	720590016	No	Not Valid	Not Valid	Not Valid	0	3	4
Humacao, PR	720690001	No	Not Valid	Not Valid	Not Valid	0	4	4

<sup>7</sup> In certain circumstances, one or more monitoring locations within a monitoring network may not meet the network technical requirements set forth in 40 CFR 58.11(e), which states, “State and local governments must assess data from Class III PM<sub>2.5</sub> FEM and ARM monitors operated within their network using the performance criteria described in table C-4 to subpart C of part 53 of this chapter, for cases where the data are identified as not of sufficient comparability to a collocated FRM, and the monitoring agency requests that the FEM or ARM data should not be used in comparison to the NAAQS. These assessments are required in the monitoring agency’s annual monitoring network plan described in §58.10(b) for cases where the FEM or ARM is identified as not of sufficient comparability to a collocated FRM....”

Mayagüez Municipio, PR	72097006	No	Not Valid	Not Valid	Not Valid	2	4	2
San Juan, PR	721270003	No	Not Valid	Not Valid	Not Valid	1	2	0

### **Conclusion for Puerto Rico**

Based on the assessment described above, EPA has preliminarily concluded that the entire Commonwealth of Puerto Rico should be designated unclassifiable. There is not enough data for EPA to make an attainment or nonattainment designation.